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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/559,273	04/27/2000	Toshiya Uemura	PM 270586	2293

7590 09/09/2003

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EXAMINER
NGUYEN, JOSEPH H

ART UNIT	PAPER NUMBER
2815	

DATE MAILED: 09/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/559,273	Applicant(s) UEMURA ET AL.	
	Examiner Joseph Nguyen	Art Unit 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 August 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10,12 and 27-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,12 and 27-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 April 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-6, 12, 27-29, 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al as applied to claim1 above, and further in view of Okazaki.

Regarding claim 1, Nakamura et al discloses on figure 1 substantially all the structures set forth in the claimed invention except said first positive electrode layer comprising at least one of Rh. However, Okazaki discloses on figure 1A said first positive electrode layer 9 comprising at least one of Rh. In view of such teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nakamura et al by having said first positive electrode layer comprising at least one of Rh for the purpose of improving the external quantum efficiency as taught by Okazaki (Abstract).

Regarding claim 2, Nakamura et al and Okazaki together disclose all the structure set forth in the claimed invention.

Regarding claim 3, Nakamura et al discloses on figure 1 substantially all the structures set forth in the claimed invention except a first thin film metal layer made of at

least one of Co, Ni or an alloy of these metals, formed between said p type semiconductor layer and said first positive electrode layer. However, Okazaki discloses on figure 5A a first thin film metal layer 9 made of at least one of Co, Ni or an alloy of these metals, formed between said p type semiconductor layer and said first positive electrode layer 10. In view of such teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nakamura et l by having a first thin film metal layer made of at least one of Co, Ni or an alloy of these metals, formed between said p type semiconductor layer and said first positive electrode layer for the purpose of improving the external quantum efficiency as taught by Okazaki (Abstract).

Regarding claims 4-6 and 12, 27-29, Nakamura et al and Okazaki together discloses all the structures set forth in the claimed invention.

Regarding claims 32-33, Nakamura et al and Okazaki together disclose substantially all the structures set forth in the claimed invention except the thickness of the first positive electrode layer being in the range of 0.01 mm to 5 mm. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nakamura et al and Okazaki by having the thickness of the first positive electrode layer being in the range of 0.01 mm to 5 mm for the purpose of improving the performance of a light emitting diode device, since it has been held that where the general conditions of a claim are disclosed in the prior art discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claim 34, Nakamura et al and Okazaki together disclose substantially all the structures set forth in the claimed invention except the thickness of the second positive electrode layer being in the range of 0.01 mm to 5 mm. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nakamura et al and Okazaki by having the thickness of the second positive electrode layer being in the range of 0.01 mm to 5 mm for the purpose of improving the performance of a light emitting diode device, since it has been held that where the general conditions of a claim are disclosed in the prior art discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Claims 7-10, 30-31, 35, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakaruma et al and Okazaki, and further in view of Neumann et al.

Regarding claims 7 and 8, Nakaruma et al and Okazaki disclose substantially all the structure set forth in the claimed invention except the second thin film metal layer made of at least one of gold and an alloy including gold. However, Neumann et al discloses on figure 1 the second thin film metal layer 5 made of at least one of gold and an alloy including gold (col. 3, line 27). In view of such teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nakaruma et al and Okazaki by having the second thin film metal layer made of at least one of gold and an alloy including gold for the purpose of providing a highly desirable, good ohmic contact as taught by Neumann et al (col. 3m lines 26-29).

Regarding claims 9-10, 30-31, 35 Nakaruma et al and Okazaki and Yanagihar et al together disclose all the structures set forth in the claimed invention.

Regarding claim 36, Nakaruma et al and Okazaki and Yanagihar et al together disclose substantially all the structures set forth in the claimed invention except the thickness of the third positive electrode layer being in the range of 3A to 1000A. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nakamura et al and Okazaki and Yanagihar et al by having the thickness of the third positive electrode layer being in the range of 3A to 1000A for the purpose of improving the performance of a light emitting diode device, since it has been held that where the general conditions of a claim are disclosed in the prior art discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Response to Arguments

Applicant's arguments with respect to claims 1-10,12,27-36 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Nguyen whose telephone number is (703) 308-1269. The examiner can normally be reached on Monday-Friday, 7:30 am- 4:30 pm

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 308-7382 for regular communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JN
September 5, 2003

EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800